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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/612,118	07/07/2000	Yan Liu	A-65351-2/DJB	7419

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EXAMINER	
LUDLOW, JAN M	

ART UNIT	PAPER NUMBER
1743	

DATE MAILED: 10/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/612,118	LIU ET AL	
	Examiner	Art Unit	
	Jan M. Ludlow	1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 May 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *50,51,53-56,58,59,61-63 and 65-71* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *70 and 71* is/are allowed.

6)☒ Claim(s) *50,51,53-56,58,59,61-63 and 65-69* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 July 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. It has come to the examiner's attention that new grounds of rejection are required, therefore, the finality of that action is withdrawn.

2. This application repeats a substantial portion of prior Application No. 09/017050, filed February 2, 1998, and adds and claims additional disclosure not presented in the prior application. Since this application names an inventor or inventors named in the prior application, it may constitute a continuation-in-part of the prior application. Should applicant desire to obtain the benefit of the filing date of the prior application, attention is directed to 35 U.S.C. 120 and 37 CFR 1.78.

3. Note that limitations to the barrier being "at least one mm thick" and the pressure of "at least 500 psi" being maintained in the generation chamber are not supported by 09/017050, but were added to the claims in the preliminary amendment filed on the same date as the instant application.

4. The amendment filed July 7, 2000 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: Note that limitations to the barrier being "at least one mm thick" and the pressure of "at least 500 psi" being maintained in the generation chamber are not supported by 09/017050, but were added to the claims in the preliminary amendment filed on the same date as the instant application.

5. Applicant is required to cancel the new matter in the reply to this Office Action, if the claim of priority to application 09/017050 is maintained.

6. Claims 50, 51, 53-56, 58, 66, 67 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Note that page 8, line 8, recites the only limitation with respect to the thickness of the barrier—"1-3 mm" whereas "at least one mm" as now claimed is of greater scope. Note that the only reference to "at least...500 psi" is found on page 21, line 10, which refers to the pressure in the chromatography system required to keep hydrogen gas in solution within the system. It is unclear whether or not the pressure in chromatography system is the same as the pressure in the generator.

7. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Note that limitations to the barrier being "at least one mm thick" and the pressure of "at least 500 psi" being maintained in the generation chamber are not described in the specification.

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

9. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

10. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 68, 69 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 16 of U.S. Patent No. 6225129. Although the conflicting claims are not identical, they are not patentably distinct from each other because the limitations of the instant claims are encompassed by the patented claims.

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

13. A person shall be entitled to a patent unless –

14. (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

17. Determining the scope and contents of the prior art.
18. Ascertaining the differences between the prior art and the claims at issue.
19. Resolving the level of ordinary skill in the pertinent art.

20. Considering objective evidence present in the application indicating obviousness or nonobviousness.

21. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

22. The declaration filed under 37 CFR 1.132 filed May 7, 2004 is insufficient to overcome the rejection of claims based upon art as set forth in the last Office action because: The declaration is incomplete because the declaration refers to the fact that Dasgupta experimented with many different configurations (paragraph 3), and Exhibit A (p. 9) restates this position, referring to Dasgupta et al, Anal. Chem. 1991, 63, 480-486, enclosed as an exhibit, but this reference has not been provided.

23. Claims 59, 63 are rejected under 35 U.S.C. 102(b) as being anticipated by Butterworth.

24. Butterworth teaches an electrolysis cell for producing acid and base including pumps for inputting aqueous streams to the cell (Fig. 2).

25. Claims 50-51, 53, 55-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dasgupta et al. ('204) in view of Sorensen et al and/or Yamataka.

26. Dasgupta teaches a method for generating an eluent prior to combination with a sample and passage through a chromatographic column, suppressor and conductivity detector (Fig. 1). The eluent is generated by electrolysis in an ion exchange device (fig 4) having a cation source reservoir 74, a permselective barrier 42, an aqueous feed 90 to a base generation chamber 82 and electrodes 54, 56. Ion exchange screens 38, 52 are provided, but ion exchange particles may be used (Col. 5, lines 25-30). Gas produced by electrolysis can be removed prior to use as an eluent (col. 9, lines 4-46). The device can be in the form of nested tubes (Figs. 8-9), with either the product or source channel in the interior or exterior (col. 10, lines 15-45). The device can be used with chromatographic systems, including in gradients (col. 10, lines 46-57), Figure 1.

27. Dasgupta fails to explicitly teach the claimed barrier thickness or volume ratio.

28. Sorenesen teaches an improved ion exchange membrane for use in electrolytic cells. It is preferably .01 to 2 mm thick in sheet form (col. 9, line 49).

29. Yamataka teaches an electrolytic cell having a membrane 1.6 mm thick (col. 17, line 63).

30. It would have been obvious to one of ordinary skill in the art to use the membrane of Sorensen in the invention of Dasgupta in order to provide enhanced cell performance as taught by Sorensen and/or in order to use a membrane of known thickness as taught by Yamataka for its intended purpose. It would have been further obvious to optimize the volume of the reservoir and chamber in order to optimize function, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only

routine skill in the art (*In re Aller,* 105 USPQ 233). Note that in figure 9, if the generation channel is the innermost lumen surrounding the electrode and the ion source is the outermost lumen, the claim limitation is satisfied. It would have been obvious to make the device of Dasgupta in relative dimensions approximating the Figures in order to make the device as shown. It would have been obvious to provide an ion exchange bed in place of the ion exchange screens as taught and to provide an uncharged screen to support the ion exchange resin as was known in the art, e.g., as an extended frit structure.

31. Claims 59, 61-63, 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dasgupta in view of JP 07-134120.

32. The teachings of Dasgupta are given above. A pump 22 is shown coupled to the outlet of the generation cell.

33. Dasgupta fails to teach a pump upstream of the generation chamber.

34. JP teaches an electrolytic cell for treating eluent prior to passage through a chromatography column. Pumps 10 input fluids into the cell (Figure 5).

35. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the pump upstream of the electrolytic cell in order to provide the flow pattern shown in an art recognized alternative including an electrolytic cell upstream of a chromatography column as taught by JP.

36. Claims 70, 71 are allowed for the reasons of record.

37. Applicant's arguments filed July 31, 2003 have been fully considered but they are not persuasive. Applicant argues that Sorensen does not teach use of thicker

membranes in a device for generating acids and bases, but Sorensen teaches use in electrolytic cells. Applicant argues that the instant invention requires the thicker membranes as a result of higher pressure, but the pressure is not claimed. The declaration is insufficient to overcome the rejection because the reference including the comparative data has not been provided.

38. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jan M. Ludlow whose telephone number is (571) 272-1260. The examiner can normally be reached on Monday-Thursday, 11:30 am - 8:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jan M. Ludlow
Primary Examiner
Art Unit 1743

Jml
October 4, 2004